

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-328636

(43)Date of publication of application : 27.11.2001

(51)Int.Cl.

B65D 23/10

B29C 49/08

B29C 49/20

// B29K 67:00

B29K105:20

B29K667:00

B29L 22:00

(21)Application number : 2000-148155

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(22)Date of filing : 19.05.2000

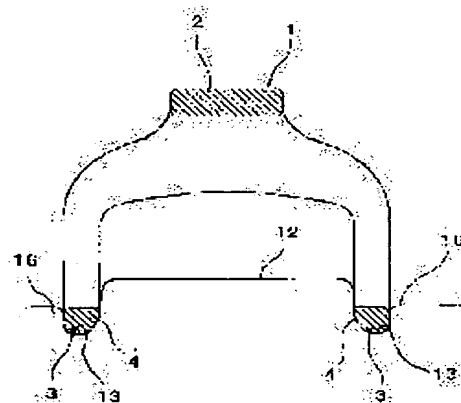
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(54) HANDLE OF SYNTHETIC RESIN BOTTLE

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce generation of the creaking noise caused by the rubbing therebetween by the difficulty in slip between components manufactured of the same material in an assembly of a biaxial orientation blow molded bottle body manufactured of polyethylene terephthalate resin is assembled with a handle with the handle as an insert.

SOLUTION: In the assembly of the polyethylene terephthalate resin bottle body 8 assembled with the handle 1, the handle 1 is used as the insert in the blow molding of the bottle body 8, facing side surfaces 4 facing each other of connection leg pieces 3 vertically adjacent to a pair of assembling beam pieces 5 which are engagement and assembly functional components of the handle 1 with the bottle body 8 form inclined surfaces in line contact with the bottle body when the connection leg pieces 3 are displaced with respect to the bottle body 8, and the contact area of the bottle body 8 with the handle 1 under the relative displacement is sufficiently small.



LEGAL STATUS

[Date of request for examination]

30.01.2004

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

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CLAIMS

[Claim(s)]

[Claim 1] bottle body made of polyethylene terephthalate resin (8) by which injection molding was beforehand carried out to the request configuration, and blow molding was carried out It is the handle made of polyethylene terephthalate resin by which assembly immobilization is firmly carried out with an insert molding means. Longwise tabular handle plate (2) To the front, it is said bottle body (8). The vertical line-like couple which has a function part with an engagement group grapples, and it is a piece of a beam (5). It arranges to parallel. said handle plate (2) between vertical edges -- said piece of a beam with both groups (5) Bow rod-like piece of a connection foot (3) It connects in the shape of erection, respectively, is constituted, and is said piece of a connection foot (3). Pair opposite side side which countered mutually (4) Said bottle body (8) Handle of the bottle made of synthetic resin made into the inclined plane which mutual widens ahead at extent which it receives and is displaced in the state of line contact.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the handle for the bottle made of synthetic resin with a handle constituted by carrying out biaxial drawing blow molding of the bottle body made of polyethylene terephthalate resin (it being hereafter described as PET) by making into insertion material the handle fabricated beforehand.

[0002]

[Description of the Prior Art] Although the bottle made of synthetic resin with a handle constituted by carrying out biaxial drawing blow molding of the bottle body made from PET by making into insertion material the handle by which injection molding was beforehand carried out to the fixed configuration is known as a convenient large-sized bottle of handling, in order to make easy handling of the collection at the time of abolition by type, to consider as the same product made from PET as a bottle body rather than to use a handle as polyethylene resin or polypropylene resin is desired.

[0003] Like the technique shown in JP,6-298253,A as a conventional technique which replied to this want The means of making 10% or more of degree of crystallinity crystallize the functional division with an engagement group to a bottle body on a knob etc. is used. It makes it possible to make the badness of mutual slipping by making a handle and a bottle body into the same product made from PET mitigate, to have, to prevent burst generating of the bottle body under drawing deformation, and to make a handle into the same product made from PET as a bottle body.

[0004] Moreover, as a handle used for this kind of bottle made of synthetic resin with a handle, many handles shown in the patent No. 2998820 official report are used for the reasons being [which it is stabilized and is certainly acquired with / firm / a group] a thing with a bottle body, nil why the handling as insertion material is easy, etc.

[0005] The handle shown in this patent No. 2998820 official report (Refer to drawing 1 thru/or drawing 5 hereafter) While protruding fitting protruding piece 6' on a front face ahead of longwise tabular handle plate 2' The couple of the shape of a vertical line which formed the function part with an engagement group with a bottle body 8 by preparing longitudinal-stria-like engagement protruding line 7' in the side face which countered mutually grapples, and piece of beam 5' is arranged to parallel. Between the vertical edges of handle plate 2', it has composition which connected in the shape of erection, respectively by bow rod-like piece of connection foot 3' in piece of beam with both groups 5'.

[0006] this -- having illustrated -- a handle -- one -- ' -- a couple -- grappling -- a beam -- a piece -- five -- ' -- a bottle body -- eight -- a crevice -- ten -- forming -- having had -- length -- a projected part -- 12 -- pinching -- a handle -- one -- ' -- a load -- acting -- if -- a handle -- one -- ' -- length -- a projected part -- 12 -- receiving -- pinching -- the force -- strengthening -- ** -- saying -- an operation -- from -- a bottle body -- eight -- receiving -- a handle -- one -- ' -- a group -- with -- being stabilized -- firm -- and -- certain -- attaining -- having -- ***** -- .

[0007]

[Problem(s) to be Solved by the Invention] However, while making into the product made from PET the handle shown in the patent No. 2998820 official report Although it is stabilized and can obtain with [firm] the group certainly while being stabilized and being able to obtain the biaxial drawing blow molding of a bottle body without a burst, when processing which makes the badness of slipping with a bottle body mitigate is performed and a bottle with a handle is fabricated by making this handle into insertion material There is a problem of a bottle body and a handle which says that it grapples and a squeak occurs into a part.

[0008] When [in which this squeak forms a function part with an engagement group, and it becomes immobilization to a bottle body 8] it grapples, and is adjacently located in piece of beam 5' and a load acts, the variation rate to the bottle body 8 of piece of connection foot 3' displaced to a bottle body 8 according to bending deformation of a bottle body 8, is considered to be the cause.

[0009] As shown in the important section sectional view shown in drawing 8 and drawing 9 which carried out the cutting view along with the B-B line among drawing 1, namely, piece of both connection foot 3' which has become cross-section abbreviation 4 square bar-like In case it displaces in the drawing 9 graphic display condition from the condition of drawing 8 of not displacing, the pair opposite side 4' which countered Where a pressure welding is carried out, it slides on the slot side face by the side of the vertical projected part 12 of the fitting slot 13 of a bottle body 8 into which piece of connection foot 3' has fitted, and it is thought in the field contact condition of the by no means good bottle body 8 of slipping in this case, and handle 1' that it rubs, and it is alike and a squeak occurs more.

[0010] then, it was originated that the trouble in the above-mentioned conventional technique should be canceled, and grind this invention between same bottle bodies made from PET and handles -- it makes into a technical technical problem to reduce generating of the squeak boiled and depended, and aims at preventing that displeasure arises according to a squeak at the time of handling of a bottle with a handle.

[0011]

[Means for Solving the Problem] It is the handle made from PET by which injection molding of the means of this invention which solves the above-mentioned technical technical problem is beforehand carried out to a request configuration, and assembly immobilization is firmly carried out with an insert molding means at the bottle body made from PET by which blow molding was carried out, The vertical line-like couple which has a function part with an engagement group with a bottle body ahead of a longwise tabular handle plate grapples, and the piece of a beam is arranged to parallel. The piece of a beam with both groups between the vertical edges of a handle plate by bow rod-like the piece of a connection foot It is in extent which displaces the pair opposite side side which connected in the shape of erection, respectively, and countered being constituted and both the piece of a connection foot in the state of line contact to a bottle body having considered as the inclined plane which mutual widens ahead.

[0012] Although each piece of a connection foot which the piece of a beam with each class adjoins up and down is in the condition of fitting into the fitting slot on the bottle body, and pinching the vertical projected part of a bottle body like the piece of a beam with both groups, since it does not have the function part with an engagement group, it is displaced in the direction which secedes from a fitting slot according to bending deformation of a bottle body.

[0013] If the piece of a connection foot displaces in the direction of a relief, since the pair opposite side side of the piece of a connection foot which countered the longitudinal direction is the inclined plane of extent displaced in the state of line contact to a bottle body by fitting Mizouchi, the piece of a connection foot carries out sliding displacement of the front end edge, where a bottle body (slot side face by the side of the vertical projected part of a fitting slot) is contacted in the shape of line contact.

[0014] thus -- since the touch area of the bottle body and handle which carry out a relative displacement is very small, ***** a metaphor bottle body and a handle are worn in the state of a pressure welding -- this -- grind -- it is alike and a louder squeak does not occur

[0015]

[Embodiment of the Invention] Hereafter, one example of this invention is explained, referring to a drawing. Assembly immobilization of the handle 1 which is an injection-molded product made from PET by this invention is carried out by the insert molding means in the crevice 10 by which cave-in formation was carried out at the back of the Johan part of the drum section 9 which carried out the shape of a closed-end cylindrical shape of the bottle body 8 which is a large-sized (1.0-5.0l.) biaxial drawing blow molding article made from PET.

[0016] the crevice 10 of a bottle body 8 is the height which carried out the comparatively broad vertical protruding line-like projected part 12 in the center at the base 11 of a crevice which made the center section except the vertical both ends the upright flat side about 1 law along the vertical direction, over all the height range of a crevice 10, protrudes in the shape of swelling, and is constituted.

[0017] Along with the vertical projected part 12, the fitting slot 13 is formed in the edges on both sides of the vertical projected part 12 of the fitting edge 16. To both-sides side projection one end of the vertical projected part 12 The vertical protruding line-like swelling flank 14 is ***** (ed). By ***** of this swelling flank 14 Into center-section close attendants' base part which the swelling flank 14 was adjoined, and the engagement slot was formed, and met in the height direction of the fitting slot 13 further the MEKURA hole-like fitting hole 15 -- forming -- the vertical projected part 12, the fitting slot 13, the

swelling flank 14, and the fitting hole 15 -- and the fitting edge 16 constitutes the function part with an engagement group to the handle 1 of a bottle body 8.

[0018] the couple which the handle 1 connected vertical ends with the bow rod-like piece 3 of a connection foot among the vertical ends of the vertical board-like handle plate 2, and carried out the shape of a straight-line rod -- grappling -- the piece 5 of a beam -- parallel -- the letter of erection -- preparing -- this -- it grapples, and the engagement protruding line 7 is ***** (ed) to the opposed face of the piece 5 of a beam in the shape of a straight line, it is clinched, and the fitting protruding piece 6 is protruded and constituted in the center of an apical surface of the piece 5 of a beam.

[0019] Each piece 3 of a connection foot makes the inclined plane the pair opposite side side 4 which countered mutually. Dip extent of this pair opposite side side 4 As shown in drawing 7, from extent displaced in the state of line contact to a bottle body 8, i.e., the immobilite shown in drawing 6 When the piece 3 of a connection foot displaces in the direction which slips out from the fitting slot 13, it is the back end edge (in drawing 6 and 7) of the pair opposite side side 4. Even if the bending deformation by which only an upper bed edge carries out a pressure welding to the slot side face by the side of the vertical projected part 12 of the fitting slot 13, and goes in the pair opposite side side 4 to the slot side face by the side of the vertical projected part 12 of the fitting slot 13 occurs The slot side face by the side of the vertical projected part 12 of this fitting slot 13 serves as dip which is extent which does not contact other parts of the pair opposite side side 4.

[0020] thus -- since the slot side face of the fitting slot 13 and the pair opposite side side 4 of the piece 3 of a connection foot which carry out a relative displacement according to bending deformation of a bottle body 8 maintain the very small line contact condition of a touch area among the relative displacement -- the slot side face of the fitting slot 13, and the pair opposite side side 4 of the piece 3 of a connection foot -- grind -- the squeak which is boiled and is generated more becomes a small thing.

[0021]

[Effect of the Invention] Since this invention has the above-mentioned composition, it does so the effectiveness taken below. Since the contact condition in the relative displacement over the bottle body of the piece of a connection foot of the handle which carries out a relative displacement according to bending deformation of this bottle body was specified as the line contact condition to the bottle body the mutual touch area in a relative displacement -- a thing small enough -- it can carry out -- thereby -- a bottle body and a handle -- grind -- handling of the bottle which can make small enough the squeak which is boiled and is generated more, has it, and has a handle does not become unpleasant according to a squeak

[0022] Since the pair opposite side side of the piece of a connection foot is only made into the inclined plane for which it asks, the operation can carry out simply and cheaply.

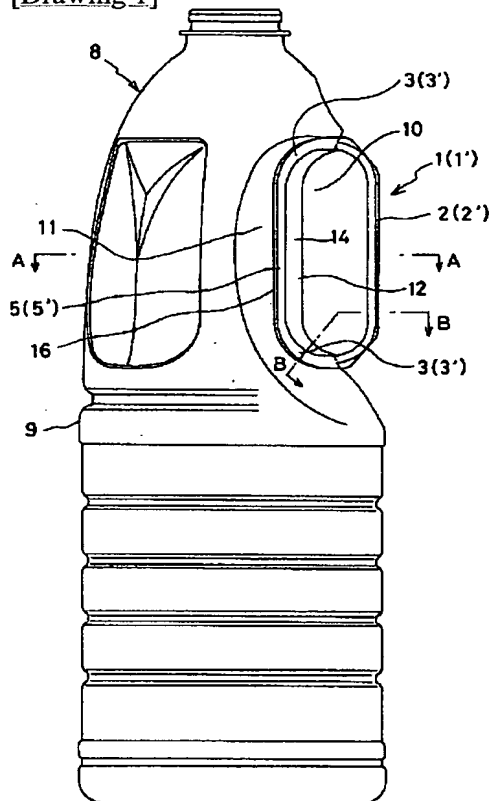
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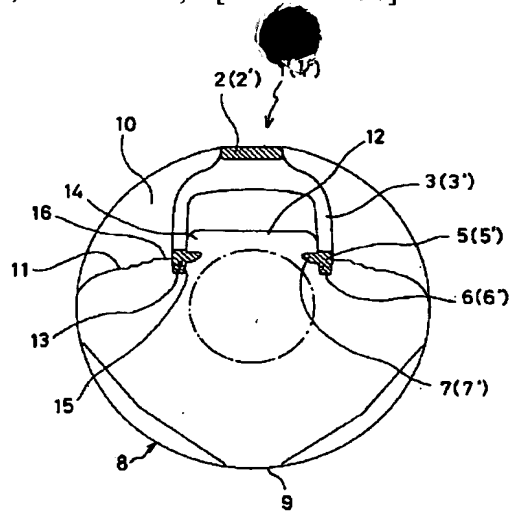
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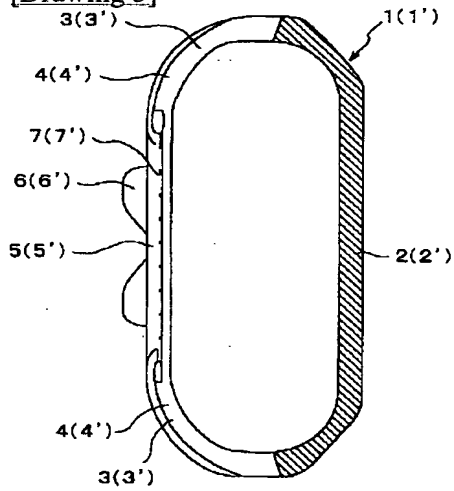
DRAWINGS

[Drawing 1]**[Drawing 2]**

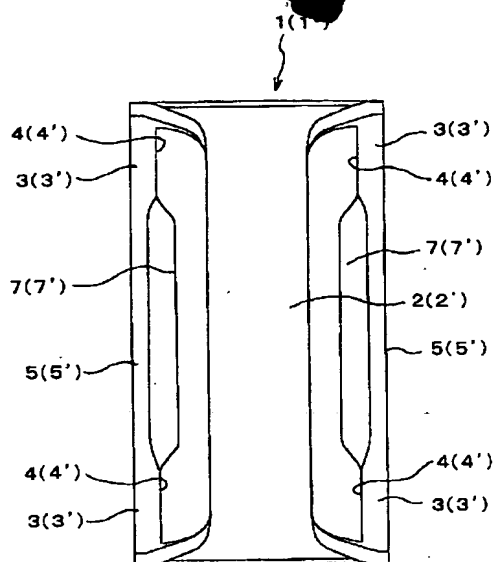


- | | | |
|-------------|--------------|-------------|
| 1' 1 : 把手 | 2' 2 : 把手板 | 3' 3 : 連結脚片 |
| 4' 4 : 对向侧面 | 5' 5 : 组付支撑片 | 6' 6 : 嵌合突片 |
| 7' 7 : 嵌合突条 | 8 : 罐本体 | 9 : 凹部 |
| 10 : 凹部 | 11 : 凹部底面 | 12 : 嵌突部 |
| 13 : 嵌合溝 | 14 : 影出側部 | 15 : 嵌合穴部 |
| 16 : 嵌合端部 | | |

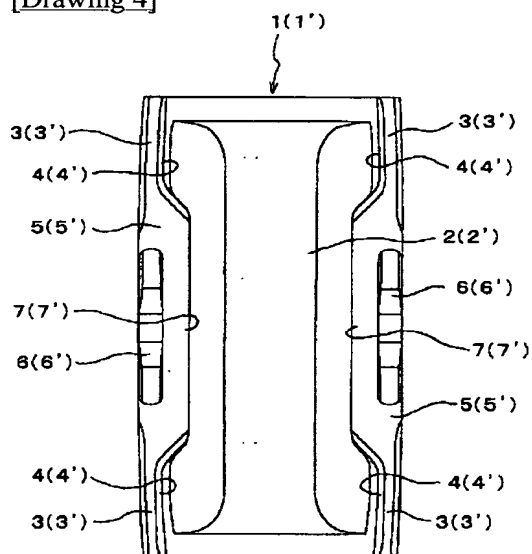
[Drawing 5]



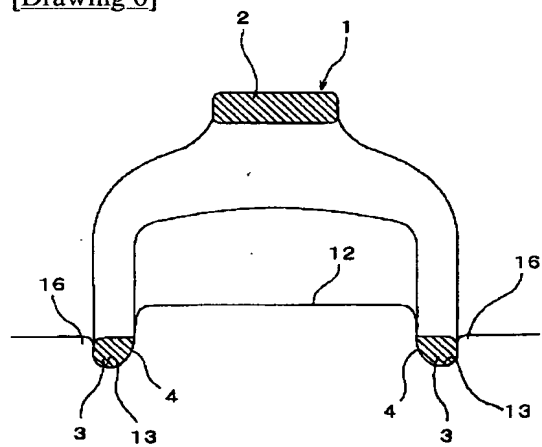
[Drawing 3]



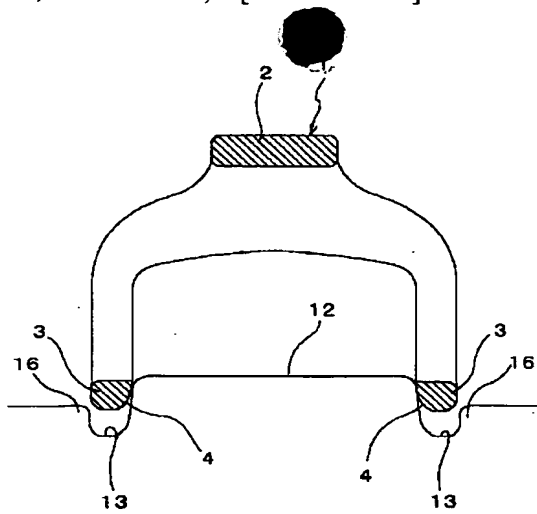
[Drawing 4]



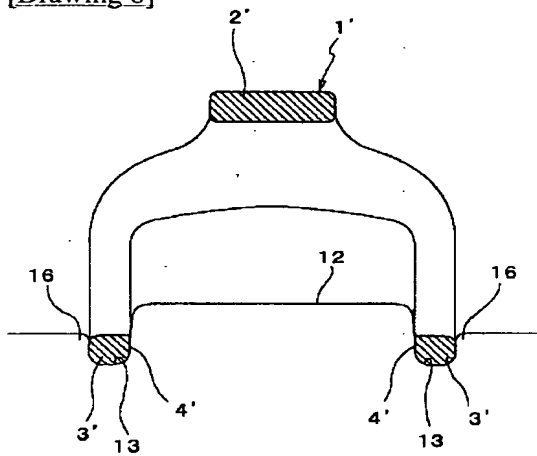
[Drawing 6]



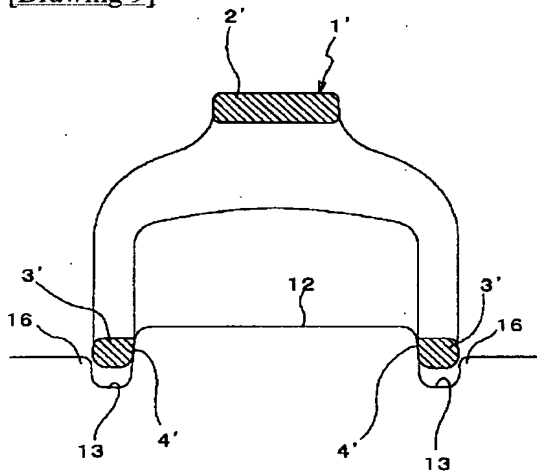
[Drawing 7]



[Drawing 8]



[Drawing 9]



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(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開2001-328636

(P 2 0 0 1 - 3 2 8 6 3 6 A)

(43) 公開日 平成13年11月27日 (2001. 11. 27)

(51) Int. Cl. ⁷

識別記号

F I

テーマコード (参考)

B65D 23/10

B65D 23/10

A 3E062

B29C 49/08

B29C 49/08

4F208

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審査請求 未請求 請求項の数 1 O L (全 6 頁) 最終頁に続く

(21) 出願番号 特願2000-148155 (P 2000-148155)

(22) 出願日 平成12年 5 月19日 (2000. 5. 19)

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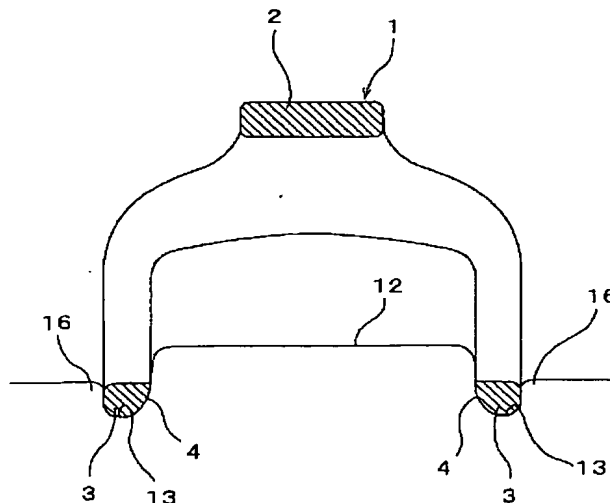
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(54) 【発明の名称】 合成樹脂製壺体の把手

(57) 【要約】

【課題】 ポリエチレンテレフタレート樹脂製の壺本体と把手とを、把手をインサート材として壺本体を 2 軸延伸ブロー成形して組付けたものにおいて、同材料製同志間の滑り難さにより、相互間の擦れに伴うキシミ音の発生をできるかぎり低減させる。

【解決手段】 ポリエチレンテレフタレート樹脂製の壺本体 8 と把手 1 とを、壺本体 8 のブロー成形時にインサート材として使用される把手 1 であって、把手 1 の壺本体 8 に対する係合組付き機能部である一对の組付き梁片 5 の上下に隣接した連結脚片 3 の相互に対向した対向側面 4 を、連結脚片 3 が壺本体 8 に対して変位した際に、線接触となる傾斜面とし、これにより相対変位中の壺本体 8 と把手 1 との接触面積を十分に小さくする。



【特許請求の範囲】

【請求項 1】 予め所望形状に射出成形され、ブロー成形されたポリエチレンテレフタレート樹脂製の壺本体(8)に、インサート成形手段により強固に組付け固定されるポリエチレンテレフタレート樹脂製の把手であって、縦長板状の把手板(2)の前方に、前記壺本体(8)との係合組付き機能部を有する縦棒状の一对の組付き梁片(5)を平行に配置し、前記把手板(2)の上下端間に、前記両組付き梁片(5)を、湾曲棒状の連結脚片(3)により、それぞれ架設状に連結して構成され、前記連結脚片(3)の相互に対向した対向側面(4)を、前記壺本体(8)に対して線接触状態で変位する程度に、相互間が前方に拡幅する傾斜面とした合成樹脂製壺体の把手。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、予め成形した把手をインサート材としてポリエチレンテレフタレート樹脂(以下、PETと記す)製の壺本体を2軸延伸ブロー成形して構成される把手付き合成樹脂製壺体のための把手に関するものである。

【0002】

【従来の技術】予め一定形状に射出成形された把手をインサート材として、PET製壺本体を2軸延伸ブロー成形して構成される把手付き合成樹脂製壺体が、取扱いの便利な大型壺体として知られているが、廃棄時の分別回収の取扱いを容易なものとするために、把手をポリエチレン樹脂やポリプロピレン樹脂とするのではなく、壺本体と同じPET製とすることが望まれている。

【0003】この要望に答えた従来技術として、特開平6-298253号公報に示された技術のように、把手の壺本体に対する係合組付き機能部分を、結晶化度10%以上に結晶化させる等の手段を用いて、把手と壺本体とを同じPET製とすることによる、相互間の滑りの悪さを軽減させ、もって延伸変形中の壺本体の破裂発生を防止して、把手を壺本体と同じPET製とすることを可能としている。

【0004】また、この種の把手付き合成樹脂製壺体を使用される把手としては、特許第2998820号公報に示された把手が、壺本体との安定して強固な組付きが確実に得られること、インサート材としての取扱いが容易であること等の理由によって、多数利用されている。

【0005】この特許第2998820号公報に示された把手は、(以下、図1ないし図5参照)縦長板状の把手板2'の前方に、前面に嵌合突片6'を突設すると共に、相互に対向した側面に縦条状の係合突条7'を設けることにより、壺本体8との係合組付き機能部を形成した縦棒状の一对の組付き梁片5'を平行に配置し、把手板2'の上下端間に、両組付き梁片5'を、湾曲棒状の連結脚片3'により、それぞれ架設状に連結した構成となっている。

【0006】この図示した把手1'は、一对の組付き梁片5'が、壺本体8の凹部10に形成された縦突部12を挟持し、把手1'に負荷が作用すると、把手1'の縦突部12に対する挟持力が強化すると云う作用から、壺本体8に対する把手1'の組付きが、安定して強固にそして確実に達成されることになる。

【0007】

【発明が解決しようとする課題】しかしながら、特許第2998820号公報に示された把手をPET製とすると共に、壺本体との滑りの悪さを軽減させる処理を施し、この把手をインサート材として把手付き壺体を成形したところ、破裂のない壺本体の2軸延伸ブロー成形を安定して得ることができると共に、安定して強固な組付きを確実に得ることができるのであるが、壺本体と把手との組付き部分にキシミ音が発生する、と云う問題がある。

【0008】このキシミ音は、係合組付き機能部を形成して壺本体8に対して不動となる組付き梁片5'に隣接して位置し、負荷が作用した際に、壺本体8の撓み変形により壺本体8に対して変位する連結脚片3'の壺本体8に対する変位が原因と考えられる。

【0009】すなわち、図1中、B-B線に沿って切断矢視した、図8および図9に示した要部断面図に示すように、断面略四角棒状となっている両連結脚片3'は、図8の無変位状態から図9図示状態に変位する際に、その対向した対向側面4'を、連結脚片3'が嵌合している壺本体8の嵌合溝13の縦突部12側の溝側面に圧接させた状態で撓動し、この際の、滑りの決して良くない壺本体8と把手1'との面接触状態での擦れによりキシミ音が発生するものと思われる。

【0010】そこで、本発明は、上記した従来技術における問題点を解消すべく創案されたもので、同じPET製の壺本体と把手との間の擦れによるキシミ音の発生を低減させることを技術的課題とし、把手を持つての壺体の取扱い時に、キシミ音により不快感が生じるのを防止することを目的とする。

【0011】

【課題を解決するための手段】上記技術的課題を解決する本発明の手段は、予め所望形状に射出成形され、ブロー成形されたPET製の壺本体に、インサート成形手段により強固に組付け固定されるPET製の把手であること、縦長板状の把手板の前方に、壺本体との係合組付き機能部を有する縦棒状の一对の組付き梁片を平行に配置し、把手板の上下端間に、両組付き梁片を、湾曲棒状の連結脚片により、それぞれ架設状に連結して構成されること、連結脚片の相互に対向した対向側面を、壺本体に対して線接触状態で変位する程度に、相互間が前方に拡幅する傾斜面としたこと、にある。

【0012】各組付き梁片の上下に隣接する各連結脚片は、両組付き梁片と同様に、壺本体の嵌合溝に嵌合し

て、壙本体の縦突部を挟み付ける状態となっているものの、係合組付き機能部を有していないので、壙本体の撓み変形に従って、嵌合溝から離脱する方向に変位する。

【0013】嵌合溝内で、連結脚片が浮き上がり方向に変位すると、横方向に対向した連結脚片の対向側面が、壙本体に対して線接触状態で変位する程度の傾斜面となっているので、連結脚片は、その前端縁を線接触状に壙本体（嵌合溝の縦突部側の溝側面）と接触した状態で摺動変位する。

【0014】このように、相対変位する壙本体と把手との接触面積がきわめて小さいので、例えば壙本体と把手とが圧接状態で擦れたとしても、この擦れにより大きなキシミ音が発生することはない。

【0015】

【発明の実施の形態】以下、本発明の一実施例を、図面を参照しながら説明する。本発明によるPET製射出成形品である把手1は、大型（1.0～5.0リットル）なPET製2軸延伸ブロー成形品である壙本体8の有底円筒形状をした胴部9の上半部分の後部に陥没形成された凹部10に、インサート成形手段により組付け固定される。

【0016】壙本体8の凹部10は、その上下両端部を除く中央部を直立した平坦面とした凹部底面11の中央に、上下方向に沿って比較的幅広な突条状の縦突部12を、ほぼ一定した高さで、凹部10の全高さ範囲にわたって膨出状に突設して構成されている。

【0017】縦突部12の両側縁には、嵌合縁部16により縦突部12に沿って嵌合溝13が形成され、また縦突部12の両側面突出端側には、縦突条状の膨出側部14が突条設されており、この膨出側部14の突条設により、膨出側部14に隣接して係合溝が形成され、さらに嵌合溝13の高さ方向に沿った中央部側近の底面部分には、メクラ穴状の嵌合穴部15を形成し、縦突部12と嵌合溝13と膨出側部14と嵌合穴部15とそして嵌合縁部16とにより、壙本体8の把手1に対する係合組付き機能部を構成している。

【0018】把手1は、縦板状の把手板2の上下両端間に、上下両端を湾曲棒状の連結脚片3に連結して、直線棒状をした一對の組付き梁片5を平行に架設状に設け、この組付き梁片5の対向面に、直線状に係合突条7を突条設し、組付き梁片5の先端面中央に嵌合突片6を突設して構成されている。

【0019】各連結脚片3は、相互に対向した対向側面4を傾斜面としており、この対向側面4の傾斜程度は、壙本体8に対して線接触状態で変位する程度、すなわち図6に示した不動状態から、図7に示すように、連結脚片3が嵌合溝13から抜け出す方向に変位した際、対向側面4の後端縁（図6および7において、上端縁）だけが、嵌合溝13の縦突部12側の溝側面に圧接し、嵌合溝13の縦突部12側の溝側面に、対向側面4に向かう

撓み変形が発生したとしても、この嵌合溝13の縦突部12側の溝側面が対向側面4の他の部分に接触することがない、程度の傾斜となっている。

【0020】このように、壙本体8の撓み変形により相対変位する嵌合溝13の溝側面と連結脚片3の対向側面4とが、その相対変位中、接触面積のきわめて小さい線接触状態を維持するので、嵌合溝13の溝側面と連結脚片3の対向側面4との擦れにより発生するキシミ音は小さなものとなる。

【0021】

【発明の効果】本発明は、上記した構成となっているので、以下に示す効果を奏する。壙本体に対して、この壙本体の撓み変形に従って相対変位する把手の連結脚片の、壙本体に対する相対変位中の接触状態を線接触状態に特定したので、相対変位中の相互接触面積を十分に小さなものとすることができ、これにより壙本体と把手との擦れにより発生するキシミ音を十分に小さくすることができ、もって把手を持つての壙体の取扱いが、キシミ音により不快となることがない。

【0022】連結脚片の対向側面を、所望する傾斜面とするだけであるので、その実施が簡単にかつ安価に行うことができる。

【図面の簡単な説明】

【図1】本発明の一実施例を組付けた壙体の、全体側面図。

【図2】図1中、A-A線に沿って切断矢視した、平断面図。

【図3】図1に示した本発明の実施例の、背面図。

【図4】図3に示した実施例の、正面図。

【図5】図3に示した実施例の、縦断側面図。

【図6】図1中、B-B線に沿って切断矢視した、要部断面図。

【図7】図6に示した部分の、変位した状態を示す要部断面図。

【図8】図1中、B-B線に沿って切断矢視した、従来例の要部断面図。

【図9】図8に示した部分の、変位した状態を示す要部断面図。

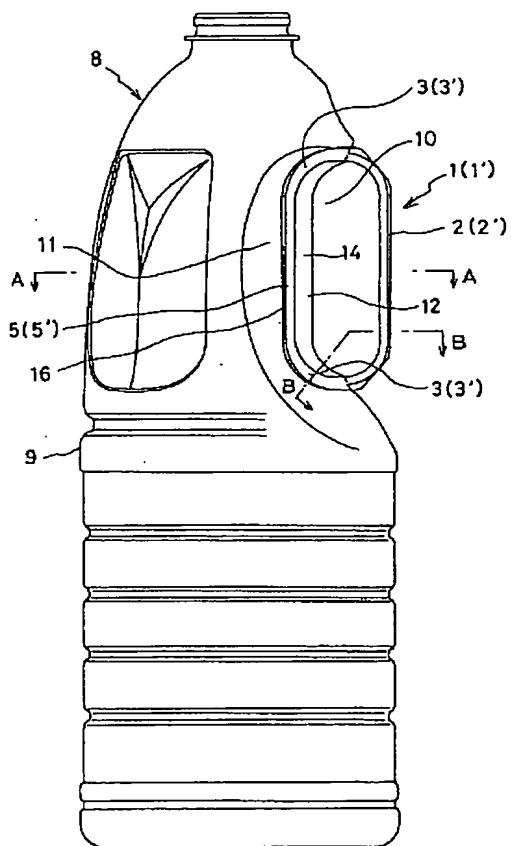
【符号の説明】

- 1 ; 把手
- 1' ; 把手
- 2 ; 把手板
- 2' ; 把手板
- 3 ; 連結脚部
- 3' ; 連結脚部
- 4 ; 対向側面
- 4' ; 対向側面
- 5 ; 組付き梁片
- 5' ; 組付き梁片
- 6 ; 嵌合突片

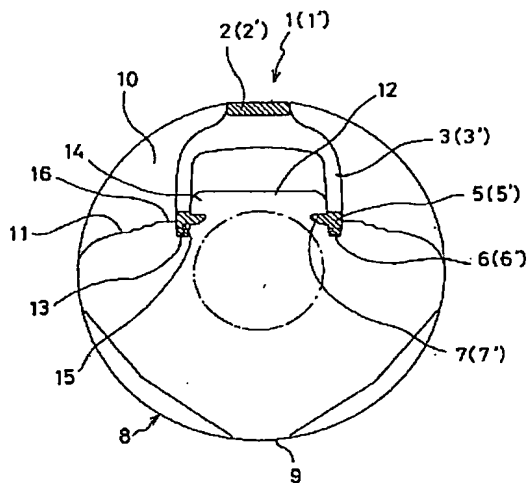
- 6' ; 嵌合突片
7 ; 係合突条
7' ; 係合突条
8 ; 壺本体
9 ; 胴部
10 ; 凹部

- 11 ; 凹部底面
12 ; 縦突部
13 ; 嵌合溝
14 ; 膨出側部
15 ; 嵌合穴部
16 ; 嵌合縁部

【図 1】

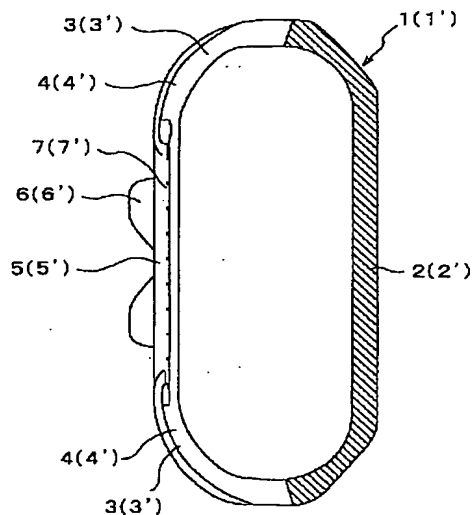


【図 2】

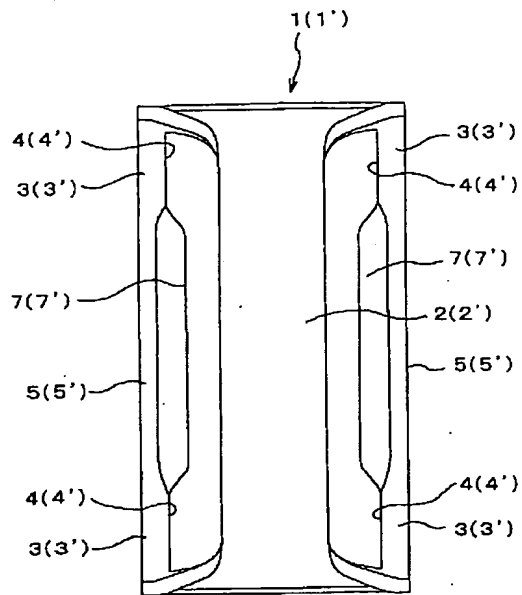


- | | | |
|-------------|--------------|-------------|
| 1' 1 ; 把手 | 2' 2 ; 把手板 | 3' 3 ; 連結脚片 |
| 4' 4 ; 対向側面 | 5' 5 ; 組付き梁片 | 6' 6 ; 嵌合突片 |
| 7' 7 ; 係合突条 | 8 ; 壺本体 | 9 ; 胴部 |
| 10 ; 凹部 | 11 ; 凹部底面 | 12 ; 縦突部 |
| 13 ; 嵌合溝 | 14 ; 膨出側部 | 15 ; 嵌合穴部 |
| 16 ; 嵌合縁部 | | |

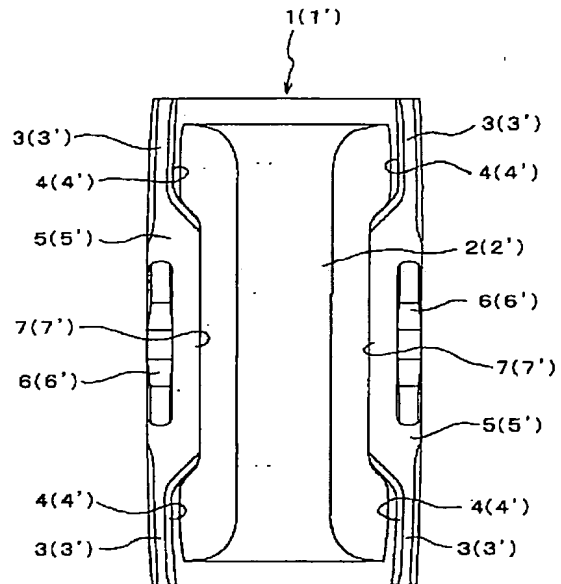
【図 5】



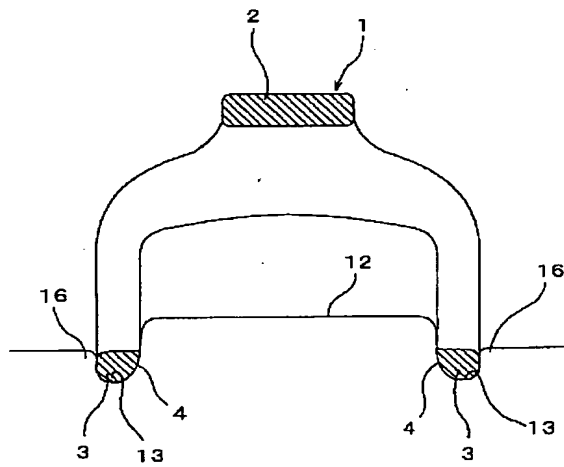
【図 3】



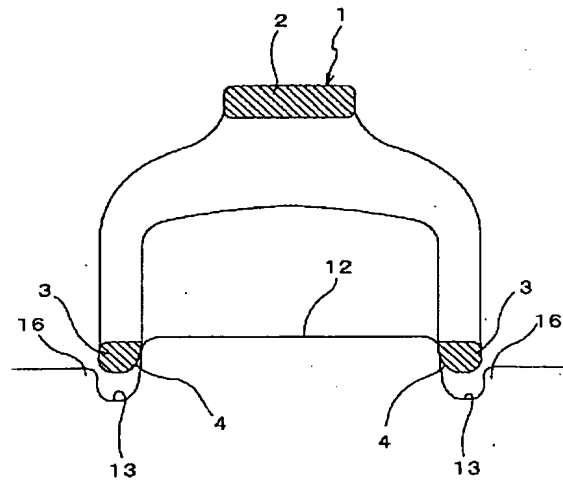
【図 4】



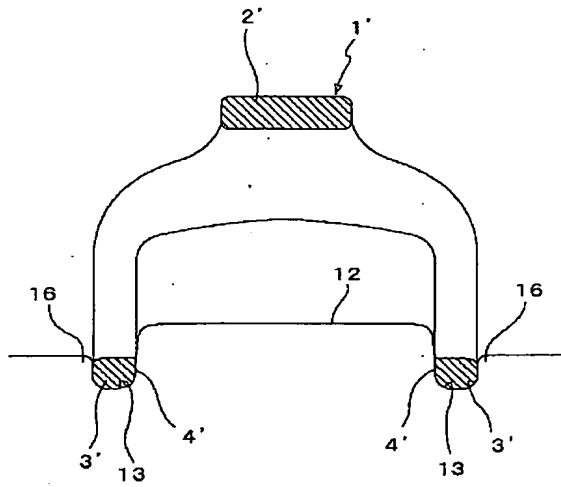
【図 6】



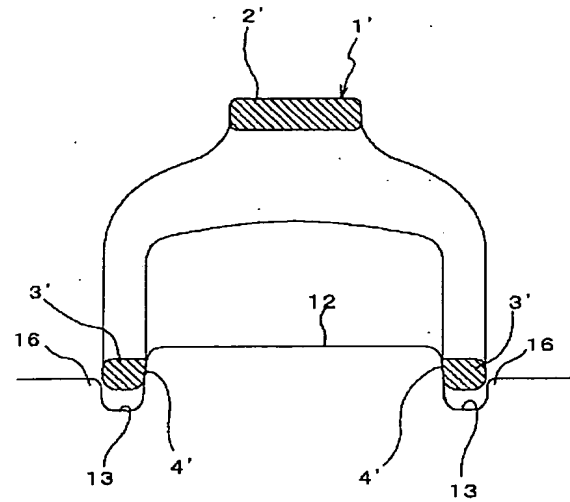
【図 7】



【図 8】



【図 9】



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(51) Int. Cl. ⁷
667:00
B29L 22:00

識別記号

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667:00
B29L 22:00

ターマコード (参考)

F ターム (参考) 3E062 AA09 AB01 AC02 HA03 HB02
HB07 HC07
4F208 AA24 AD05 AG07 AG28 LA04
LB12 LG28

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